Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1(Currently amended).   In a communication network having a plurality of communication units, a communication unit that transmits messages to and receives messages from neighboring communication units, the communication unit comprising:

a transmitter to transmit an outgoing message to a neighboring communication unit;

a receiver to receive an incoming message from a neighboring communication unit;

a storage unit to store communication unit connectivity information, neighboring communication unit connectivity information and merge request information; and

a processor to control said transmission of outgoing messages and reception of incoming messages, wherein said processor includes:

a merge module to examine said stored communication unit connectivity information, stored neighboring communication unit connectivity information and stored merge request information to determine merge control parameters to control merger between the communication unit and a neighboring communication network; and

a controller module to control merging of the communication unit with said neighboring communication network in accordance with said merge control parameters determined by said merge module.

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2(Original).   The communication unit of claim 1 wherein said transmitter transmits said outgoing message in the form of radio signals.

3(Original).   The communication unit of claim 1 wherein said receiver receives said incoming message in the form of radio signals.

4(Original).   The communication unit of claim 1 wherein said processor further includes:

a synchronization module to determine a Time Of Day synchronization mode used by the communication unit.

5(Original).   The communication unit of claim 4 wherein the synchronization module further includes:

a startup module to join the communication unit to an existing communication network at power up using a user configurable primary Time Of Day synchronization mode.

6(Original).   The communication unit of claim 5 wherein the synchronization module further includes:

a Time Of Day mode module to change the Time Of Day synchronization mode of the communication unit in response to the communication unit failing to join a communication network with neighboring communication units using a previously selected Time Of Day

synchronization mode and to join the communication unit to an existing communication network using the changed Time Of Day synchronization mode.

7(Original).   The communication unit of claim 6 wherein the synchronization module further includes:

a network start module to start an isolated network with neighboring communication nodes upon failing to join a communication network with previously selected Time Of Day synchronization modes.

8(Original).   The communication unit of claim 1 wherein said storage unit further includes:

a connectivity module to store at least one of an identifier for a communication network to which the communication unit belongs, an identifier for a neighboring communication unit, an identifier for a communication network to which a neighboring communication unit belongs, and an identifier for a neighboring communication unit's neighbor.

9(Original).   The communication unit of claim 1 wherein said processor further includes:

a search module to determine search parameters that control the manner in which the communication unit searches for neighboring communication units and neighboring communication network nodes;

wherein the controller module further controls transmission of outgoing messages and reception of incoming messages in a manner consistent with search parameters determined by the search module.

10(Original). The communication unit of claim 9 wherein said search module further includes:

a transmit rate module to determine a rate at which the communication unit transmits outgoing messages containing network connectivity information.

11(Original). The communication unit of claim 10 wherein the transmit rate module determines the transmit rate based upon a user configurable reference transmit rate value and a percentage of network size parameter value for the communication network to which the communication unit belongs.

12(Original). The communication unit of claim 11 wherein the transmit rate is proportional to the percentage of network size parameter value.

13(Original). The communication unit of claim 9 wherein said search module further includes:

a scan window module to determine a scan window interval during which the communication unit receives incoming network connectivity messages; and

a scan window delay module to determine a delay between scan window intervals.

14(Original). The communication unit of claim 13 wherein the scan window module determines the scan window interval based upon a user configurable reference scan window value and a percentage of network size parameter value for the communication network to which the communication unit belongs.

15(Original). The communication unit of claim 14 wherein the scan window interval is inversely proportional to the percentage of network size parameter value.

16(Original). The communication unit of claim 1 wherein said merge module further includes:

a merge priority module to determine a merge priority for each neighboring communication network in response to the communication unit controlling said merging, wherein the merge priority controls the priority in which the communication unit allows the communication network to which the communication unit belongs to merge with neighboring communication networks.

17(Original). The communication unit of claim 16 wherein the merge priority module determines the merge priority for a neighboring communication network based upon a

comparison of a number of active communication units in the neighboring communication network with a number of total communication units in the neighboring communication network.

18(Original). The communication unit of claim 17 wherein the merge priority is proportional to a quotient of the number of active communication units and the number of total communication units for each respective neighboring network.

19(Currently amended).   In a communication network having a plurality of communication units that transmit messages to and receive messages from neighboring communication units, a method for establishing communication between the plurality of communication units comprising:

(a) storing communication unit connectivity information, neighboring communication unit connectivity information and merge request information within a communication unit;

(b) examining said stored <u>communication unit</u> connectivity information<u>, stored neighboring communication unit connectivity information</u> and stored merge request information to determine merge control parameters to control merger between the communication unit and a neighboring communication network; and

(c) controlling merging of the communication unit with a neighboring communication network in accordance with said merge control parameters.

20(Original). The method of claim 19, wherein communications within said communication network are in the form of radio signals.

21(Original). The method of claim 19, wherein step (c) further includes:

(c.1) determining a Time Of Day synchronization mode used by the communication unit.

22(Original). The method of claim 21, wherein step (c.1) further includes:

(c.1.1) joining the communication unit to an existing communication network using a user configurable primary Time Of Day synchronization mode.

23(Original). The method of claim 22, wherein step (c.1) further includes:

(c.1.2) changing the Time Of Day synchronization mode of the communication unit in response to the communication unit failing to join a communication network with neighboring communication units using a previously selected Time Of Day synchronization mode; and

(c.1.3) joining the communication unit to an existing communication network using the changed Time Of Day synchronization mode.

24(Original). The method of claim 23, wherein step (c.1) further includes:

(c.1.4) starting an isolated network with neighboring communication nodes upon failing to join a communication network with previously selected Time Of Day synchronization modes.

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25(Original).   The method of claim 19, wherein step (a) further includes:

(a.1) storing at least one of an identifier for a communication network to which the communication unit belongs, an identifier for a neighboring communication unit, an identifier for a communication network to which a neighboring communication unit belongs, and an identifier for a neighboring communication unit's neighbor.

26(Currently amended).   The method of claim 19, wherein step (b) further includes:

(b.1) determining search parameters that control the manner in which the communication unit searches for neighboring communication units and neighboring communication network nodes; and

(b.2) controlling transmission of outgoing messages and reception of incoming messages in a manner consistent with said determined search parameters determined by the search module.

27(Original).   The method of claim 26, wherein step (b.1) further includes:

(b.1.1) determining a rate at which the communication unit transmits outgoing messages containing network connectivity information.

28(Original).   The method of claim 27, wherein said transmit rate is based upon a user configurable reference transmit rate value and a percentage of network size parameter value for the communication network to which the communication unit belongs.

29(Original). The method of claim 28, wherein the transmit rate is proportional to the percentage of network size parameter value.

30(Currently amended). The method of claim 26, wherein step (b.1) further includes:

(b.1.1) determining a scan window interval during which the communication unit receives incoming network connectivity messages; and

(b.1.2) ~~determine~~ determining a delay between scan window intervals.

31(Original). The method of claim 30 wherein the scan window interval is determined based upon a user configurable reference scan window value and a percentage of network size parameter value for the communication network to which the communication unit belongs.

32(Original). The method of claim 31 wherein the scan window interval is inversely proportional to the percentage of network size parameter value.

33(Original). The method of claim 19, wherein step (b) further includes:

(b.1) determining a merge priority for each neighboring communication network in response to the communication unit controlling said merging, wherein the merge priority controls the priority in which the communication unit allows the communication network to which the communication unit belongs to merge with neighboring communication networks.

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34(Original). The method of claim 33, wherein the merge priority for a neighboring communication network is based upon a comparison of a number of active communication units in the neighboring communication network with a number of total communication units in the neighboring communication network.

35(Original). The method of claim 34, wherein the merge priority is proportional to a quotient of the number of active communication units and the number of total communication units for each respective neighboring network.

36(Original). A communication network comprising:

a plurality of communication units each having connectivity with a plurality of neighboring communication units that belong to the same communication network, wherein one of said communication units is designated a control node that is delegated authority for controlling merges between the communication network and a selected neighboring communication network, and wherein the control node includes:

a connectivity information storage module to store connectivity information related to connectivity between a plurality of communication units within said network and a plurality of neighboring communication units that belong to neighboring communication networks;

a merge module to examine the stored connectivity information and to set merge control parameters that control whether a merge is initiated between a communication network to which the communication unit belongs and a neighboring communication network; and

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a controller module to control network merging in a manner consistent with merge parameters determined by the merge module.

37(Original).   The network of claim 36 wherein said each communication unit transmits messages in the form of radio signals.

38(Original).   The network of claim 36 wherein said merge module further includes:

a merge priority module to determine a merge priority parameter for a neighboring communication network that determines a priority in which the communication network to which the communication unit belongs allows merges with neighboring communication networks.

39(Original).   The network of claim 38 wherein the merge priority module determines the merge priority for a neighboring communication network based upon a comparison of a count of active communication units within a neighboring communication network with a count of all communication units within a neighboring communication network.

40(Original).   The network of claim 39 wherein the merge priority is proportional to a quotient of the count of active communication units and the count of all communication units for each respective neighboring network.

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